

## CLAIMS

1. A hair styling device that heats the hair of a user by conduction of heat from a heated surface to the hair of a user, wherein the device further comprises an ion generator system, a fan, and a motor, wherein the fan directs ion flow onto the hair of the user during use.
2. The device of claim 1, which is a curling iron.
3. The device of claim 1, which is a flat straightener.
4. The device of claim 1, wherein the ion generation system comprises an ion generator connected to positive and negative electrodes, comprising one or more anode pins and one or more cathode rings.
5. A hair styling device that is a curling iron or a flat straightener that comprises:
  - an ion generator system;
  - a fan; and
  - a motor;wherein the fan directs a flow of ions produced by the ion generator system on the hair of a user, during use.
6. The device of claim 5, wherein the ion generation system comprises an ion generator connected to positive and negative electrodes, comprising one or more anode pins and one or more cathode rings.
7. A curling iron comprising:
  - a housing forming a handle portion;
  - a barrel adjoined to the housing;
  - a heater contained in the barrel for heating the barrel during use;
  - a flipper mechanically linked to a flipper actuator;
  - an ion generator system contained within the handle portion, wherein the ion generator system comprises an ion generator electrically connected to one or more anode pins and one or more cathode rings configured to generate a flow of negative ions during use;
  - a motor and a fan connected to the motor;
  - air inlets formed in the housing and in fluid communication with the fan;
  - an air guide for directing air and ions propelled by the fan into the barrel;
  - and outlet holes formed in the barrel to direct air and ion flow onto the hair of a user during use.

8. The curling iron of claim 7, wherein the flipper actuator is disposed in the housing of the handle portion.
9. The curling iron of claim 7, further comprising a power cord swivel.
10. A curling iron comprising:
  - a housing forming a handle portion;
  - a barrel adjoined to the housing;
  - a heater contained in the barrel for heating the barrel during use;
  - a flipper mechanically linked to a flipper actuator, wherein the flipper actuator is disposed in the housing of the handle portion;
  - an ion generator system contained within the handle portion, wherein the ion generator system comprises an ion generator electrically connected to one or more anode pins and one or more cathode rings configured to generate a flow of negative ions during use;
  - a motor and a fan connected to the motor;
  - air inlets formed in the housing;
  - an air guide for directing air and ions propelled by the fan into the barrel;
  - and outlet holes formed in the barrel to direct air and ion flow onto the hair of a user during use.
11. A flat straightener comprising:
  - a housing;
  - heating plates for contacting and styling a user's hair during use;
  - an ion generator system contained within the housing and comprising:
    - an ion generator connected to an array of electrodes, wherein the array of electrodes comprises one or more anode pins, each associated with a cathode ring, wherein each anode pin is coaxial with an annular opening in the respective cathode ring; and
    - an airflow system comprising a motor, a fan and an air guide contained within the housing, air inlets formed in the housing and air outlets formed adjacent at least one heating plate;
  - wherein during use, the fan draws air into the housing through the air inlets and into the air guide, wherein the air is directed across the electrode arrays and out the air outlets and onto the hair of a user during use.

12. The flat straightener of claim 11, further comprising an LED display to indicate the state of the flat straightener.
13. The flat straightener of claim 11, further comprising an adjustable heat setting.